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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,618	04/19/2001	Mitsuhiro Nishida	K-1974	8068

7590 06/23/2004

KANESAKA AND TAKEUCHI
1423 Powhatan Street
Alexandria, VA 22314

EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,618

Applicant(s)

NISHIDA ET AL.

Examiner

Lawrence D Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-19 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-19 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed March 19, 2004.

Claim 16 was amended rendering claims 16-19 and 21-28 pending.

Claim Rejections – 35 USC § 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 16-19 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al (U.S. 6,335,832) in view of Glaubitt et al (U.S. 6,177,131).
4. Oka shows an antireflection film comprising a polyester organic substrate film (column 13, lines 19-32), an acrylic hard coat layer of at least 3 microns in thickness (column 13, lines 33-67), a high refractive index layer, and an acrylic resin low refractive index layer (column 26, lines 1-16 and column 42, lines 24-37) wherein the layers comprise ionizing radiation curable acrylic resins (column 13, lines 59-67). Oka shows that ultrafine particles of metallic oxide which provide electrical conductivity are embedded in the hard coat layer and are not more than 200nm in size (column 9, lines 35-53 and column 11, line 64 to column 12, line 10 and column 22, lines 17-20) where

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the high refractive index layer has a refractive index which is higher than that of the hardcoat layer which has a refractive index of at least 1.63 (column 27, line 31 to column 29, lines 36). Oka shows that the refractive index of the low refractive index layer (surface layer) is about 1.35-1.45 (column 29, line 41 to column 30, line 35) and comprises inorganic particles with low refractive indices and hardness such as a fluorocarbon polymer (column 54, lines 1-17).

Oka does not show the specific amount of metallic oxide particles as in instant claim 17 or the amount of material penetrated into the high index of refraction layer as in instant claim 21. Oka does not show the volume percentage of void fraction as in instant claim 24. However, such ranges of particle concentration and material penetration and percentages of void fraction are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the ranges and percentages, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. ranges) fails to render claims patentable in the absence of unexpected results. All of the aforementioned limitations are result effective as they control the light transmittance, level of electrical conductivity, antireflectivity, refractive index, and voids of the antireflection film. As such, they are optimizable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the antireflection film with the limitations of the ranges since it has been held that

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discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215(CCPA1980).

Oka does not specifically show that the high index of refraction layer comprises metallic oxide particles as in instant claim 16. However, Oka shows a functional ultrafine particle layer comprising metal oxide particles such as TiO₂ and ZnO (column 11, line 64 to column 12, line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the metallic oxide particles in the hardcoat layer since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). Oka does not disclose an index of refraction layer having pores.

Glaubitt teaches a porous antireflection coating of a predetermined index of refraction (abstract) where an antireflection film is made of different refractive indices to reduce undesirable surface reflections, where the refractive index may be adjusted to the desired value (column 1, lines 63-67 and column 6, line 35 through column 7, line 2). Oka and Glaubitt are analogous art because they are both from the field of antireflection films. It would have been obvious to one of ordinary skill in the art to include pores in the high index refraction layer of Oka because Glaubitt teaches an antireflection film comprising a porous index of refraction layer helps reduce undesirable surface reflections (column 1, lines 63-67) where the second index of refraction layer

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bonds to the porous layer and is made integral by the material filling the porous part of the porous layer.

Response to Arguments

5. Arguments made in regards to rejection made under 35 USC 103(a) as being unpatentable over Oka et al (U.S. 6,335,832) in view of Glaubitt et al (U.S. 6,177,131) have been considered but are unpersuasive. Applicant argues in Oka et al. it is not disclosed or suggested that pores are formed in the resin layers. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Glaubitt teaches a porous antireflection coating of a predetermined index of refraction (abstract) where an antireflection film is made of different refractive indices to reduce undesirable surface reflections, where the refractive index may be adjusted to the desired value (column 1, lines 63-67 and column 6, line 35 through column 7, line 2). Applicant further argues since the pores are not formed in the resin layers the layers deposited on the *high* refractive index layer are simply laminated on the high refractive layers. Because Glaubitt teaches a porous high refractive index layer, it would have been obvious to one of ordinary skill in the art for the second layer deposited on the porous layer to be firmly bonded to the first layer through the pores. Applicant argues since the layers of Oka do

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not have pores, the change of index of refraction of the layer is not considered. Oka teaches where the high refractive index layer has a refractive index which is higher than that of the hardcoat layer which has a refractive index of at least 1.63 (column 27, line 31 to column 29, lines 36) and Glaubitt further teaches the refractive index of the porous layer is adjustable. Applicant argues the coating in Glaubitt has only pores and is different from the first layer of the claimed invention. Examiner respectfully disagrees because Applicant claims a porous first layer having an index of refraction and Glaubitt teaches a porous layer having an index of refraction. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Glaubitt is used to teach the conventionality of a coated porous layer having an index of refraction.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).



Lawrence D. Ferguson
Examiner
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CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

